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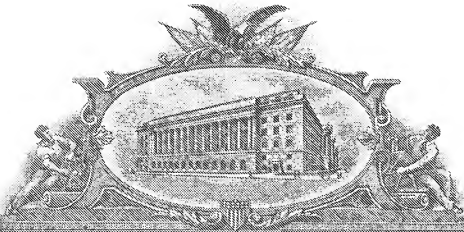
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THE UNITED STATES OF AMERICA

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March 16, 2005

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APPLICATION NUMBER: 60/548,644

FILING DATE: *February 26, 2004*

RELATED PCT APPLICATION NUMBER: PCT/US05/06543



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U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE

22154 U.S. PTO
60/548644

22154 U.S. PTO
PROVISIONAL APPLICATION FOR
PATENT COVER SHEET

ATTORNEY DOCKET NO.:
11070/48901

Address to:
Mail Stop Provisional Application
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53(c).

Inventor(s) and Residence(s) (city and either state or foreign country):

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For: MICRO CELLPHONE

1. 2 sheets of specification.
2. 12 sheets of drawings.
3. Please charge the required application filing fee of \$80.00 (small entity), and any other fees that may be required, to the deposit account of Kenyon & Kenyon, deposit account number 11-0600. A duplicate of this sheet is enclosed.
4. Please direct all communications relating to this application to:

Charles R. Brainard, Esq.
KENYON & KENYON
One Broadway
New York, New York 10004
(212) 425-7200 (phone)
(212) 425-5288 (facsimile)
5. This invention was not made by an agency of the United States Government or under a contract with an agency of the United States Government.

Respectfully submitted,

Dated: February 26, 2004

By: 

Clifford A. Ulrich (Reg. No. 42,194)

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Proposed Solution

The use of a stretchable band (as, fabric) also allows a convenient place for an information banner near each numeric key. When unstretched, the inscribed characters will be diminished in size (as vertically), but when the keyboard is ready for use, the elastic band will be stretched out, and the alphabetic characters will now be enlarged, and of a size that can be easily read by the user (usually, without glasses).

Implementation

Previous disclosures present aspects of elastic bands which can interfere with clear labeling. Rubber elastic bands can "neck down" when stretched (X direction stretching is accompanied by Y direction narrowing), although there have been means to visibly hide this characteristic from the user.

Fabric can be woven with inelastic warp threads and highly elastic wool threads, so that an iso-elastic (non-necking) stretch behavior is obtained. One convenient way of marking fabric is to use "tampon" press printing, in which dye/colorant is transferred from an inked plate to a flexible pad, and then the pad is pressed firmly on the fabric. Jacquard weaving of the character into the material is possible, but it would be complex and probably too expensive for the application.

However, until recently, the fibers used in producing elastic bands were quite large in diameter, and this interferes with producing a character inscription that will be clear when stretched (the resulting image gratification is quite coarse).

A recent innovation in elastic bands is the use of microfibers. Such an elastic band is called "Mousselin" and sold by a notions jobber, such as "International Silks" (Beverly Boulevard in Los Angeles, California.... type 1838 is 15 mm. wide and is "black" in color). The "fineness" of the Mousselin band is remarkable, very similar in "feel" to a woman's nylon stocking material.

This microfiber elastic band has a good stretchout character, about 150%. Thus, it is sufficiently stretchable for use in positioning keycaps for use in keyboards, and in particular, very small cellphone keyboards.

When this elastic band is employed for proportionally positioning keytops during stretchout, the adjacent elastic band surface provides an ideal marking surface for inscribing alphabetic or other key labels.

An accompanying drawing is furnished, which shows the application in both perspective and cross-sectional views.

Elastic Strip as combination keytop positioning and informational banner

Problem:

In some types of key arrays, it is desirable to provide information near or on each keybutton. In a standard keyboard, where possible, it is desirable to position the keytops at a "touch typing" spacing, specifically, about $\frac{3}{4}$ " spacing both laterally and vertically. Once the finger tips are correctly positioned above the "home row" keys, the fingers can be directed by learned positional muscle actions to go to a desired key.

However, if the desired key is rarely used, or the typist is not sure that a key is the proper key to use, it is usual to look at the keytops for labels, either on the keytop or nearby. Once the proper keytop is located, the finger is positioned over it to depress and thus actuate the associated keyswitch.

In the case of telephone keypads, it is typical to provide alphabetic labels near the keys so that telephone numbers can be transliterated into alphabetic and numeric sequences that are more memorable than just a sequence of numbers alone. In the US, a standard alphabetic labeling sequence for each number is offered

2=ABC 3=DEF 4=GHI 5=JKL 6=MNO 7=PRS 8=TUV 9=WXYZ.

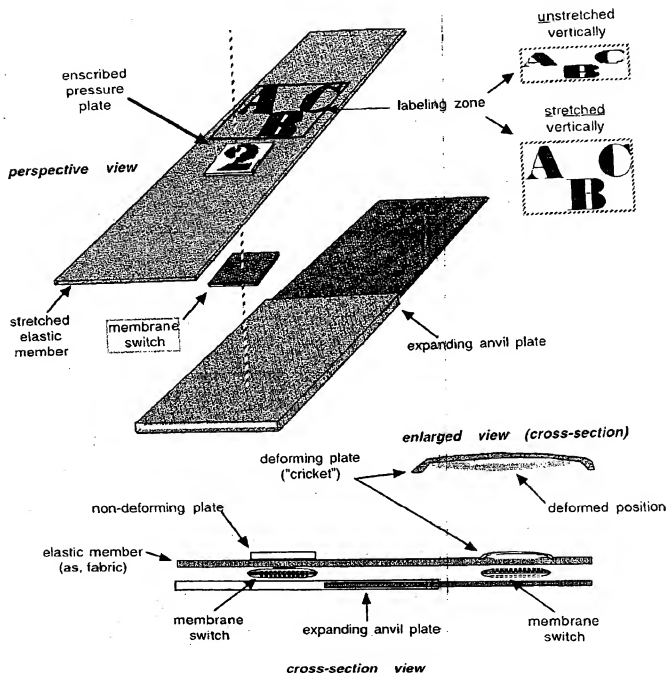
Thus, one sees plumbing trucks with signs that read "Call 1-800-TRY HARRY" since the owner feels that this is a more memorable sequence when you want a plumber than "Call 1-800-879-4277" would be. The consequence of this is that one needs to be able to easily read the alphabetic legends near each number key in order to dial the number correctly.

As cell phones become ever smaller, it is difficult to provide large enough alphabetic symbols so that they can easily be read for reasonably rapid button pressing by the user. Many cellphone letterings are so small that the user may have to utilize either glasses or a magnifier lens to adequately read the alphabetic characters.

In other countries, labeling of the number keys with symbols is common. For a label that uses multi-stroke ideographic symbols, having a character that is large enough to see easily gets very difficult when only a tiny cellphone keyboard is used.

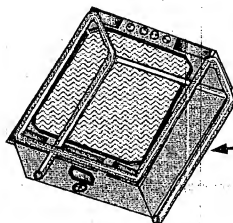
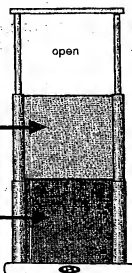
A separate disclosure will present a cellphone which utilizes a stretchable band to separate the keybuttons in a proportional manner, just as previous disclosures have presented the use of stretchable bands to allow construction of typing keyboards which can have two or more positions...compact for carrying and storage, and expanded for typing use.

Elastic Strip used as Informational Banner

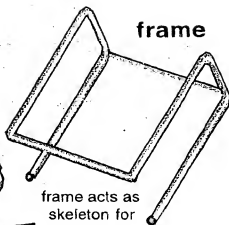


Micro Cellphone

keyboard
frame



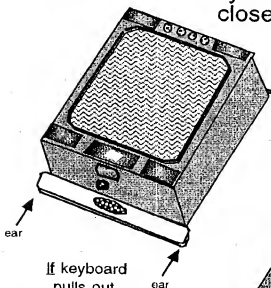
enlarged views



frame acts as
skeleton for
"main box"

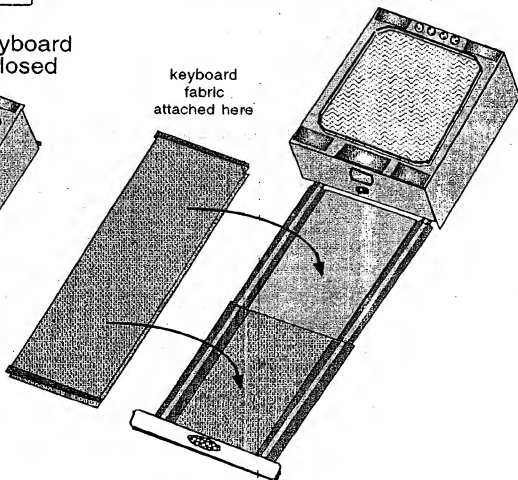
keyboard
open

keyboard
closed

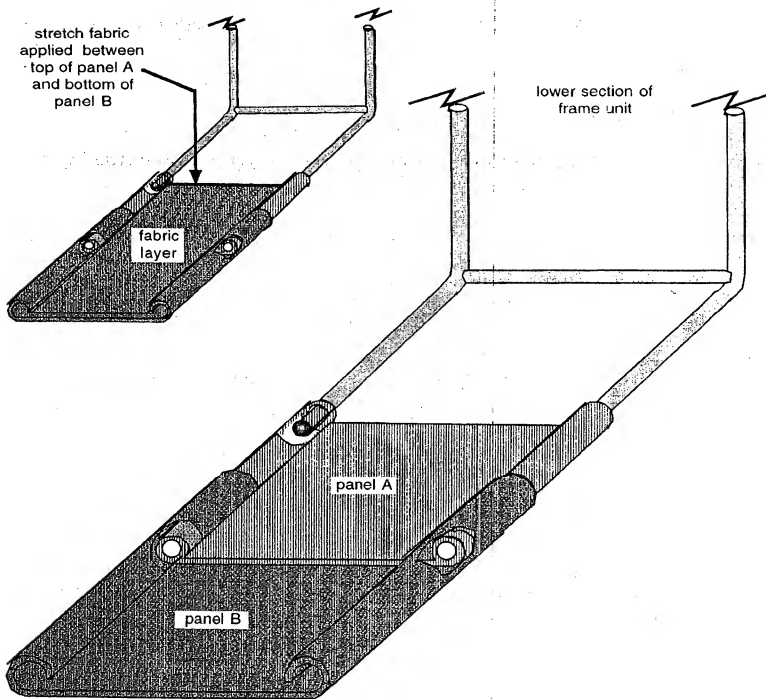


If keyboard
pulls out,
ears protrude
slightly to
provide grip.

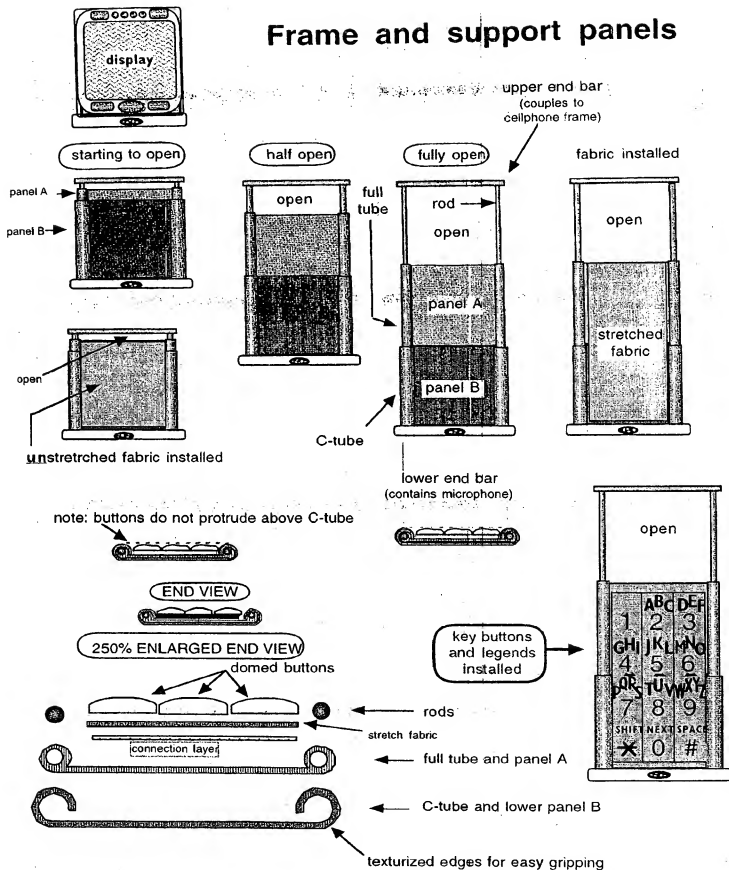
keyboard
fabric
attached here



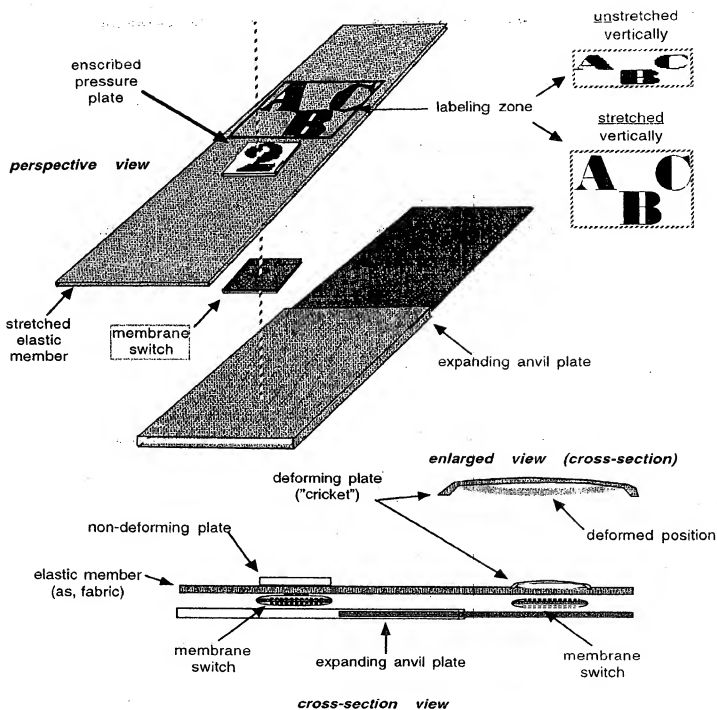
Telescoping keyboard frame



Frame and support panels



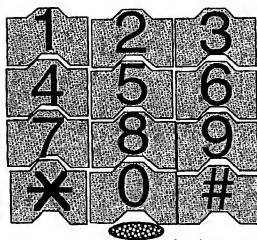
Elastic Strip used as Informational Banner



Keyboard layout

KYOCERA SMS LABELS

number plates



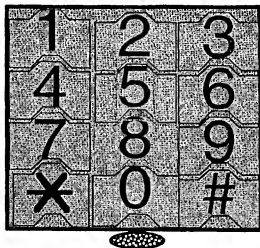
microphone

letter legends

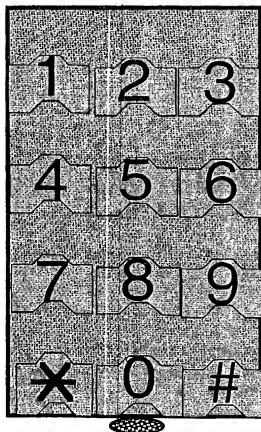


microphone

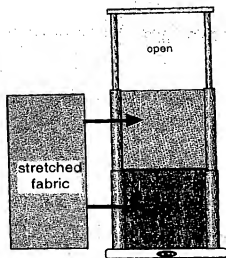
closed



open



keyboard frame

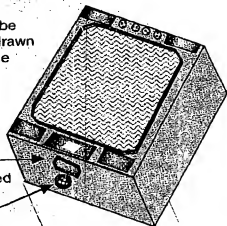


Cellphone "main box"

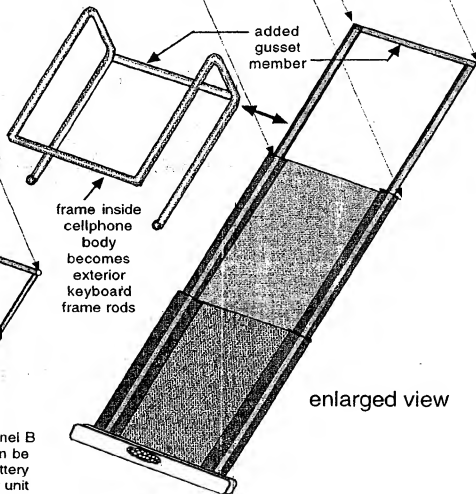
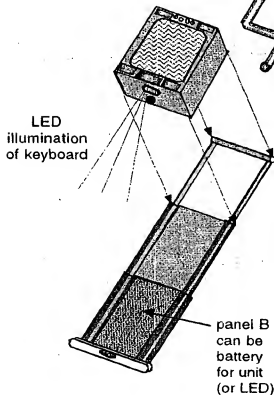
can be
deep drawn
case

LED illuminator
lamp turns on
when keyboard
extended AND
darkness is sensed

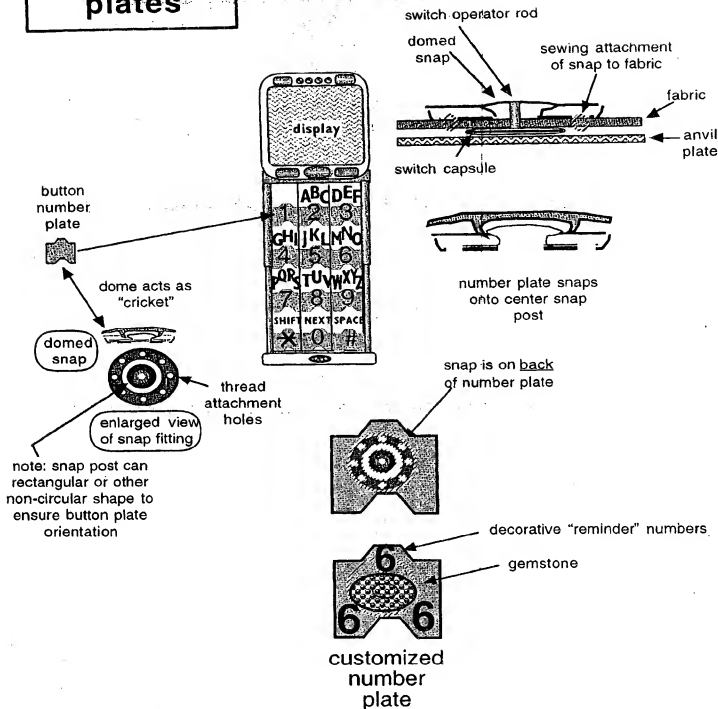
ambient light
sensor



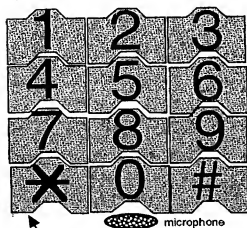
approximately
actual size



customized number plates



Switch module layout



keybutton plates

microphone

option
can use row
of 3 silicone rubber
keys and
'shorting switch plate

row of 3 switches



option:
molded
silicone
rubber
keys

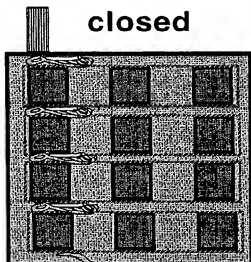
through post
or "through bump"

fabric layer

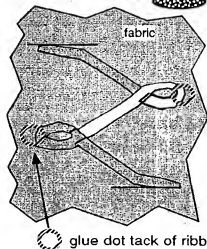
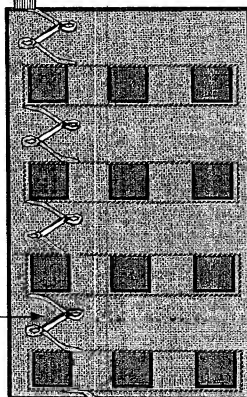
switch body
(can be
capsule
OR shorting
block)

ribbon
to logic
board

closed



open



fabric

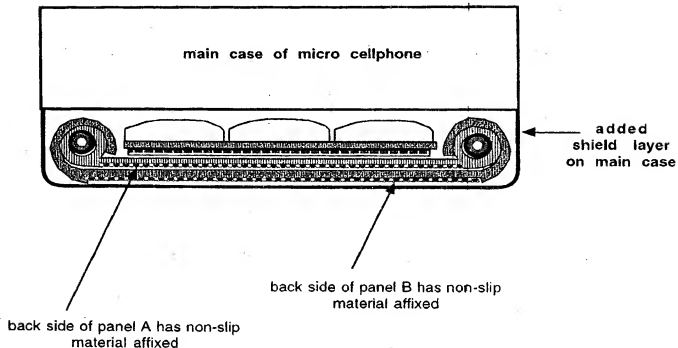
row
interconnect
ribbon
when open

3 wire lead
to microphone

glue dot tack of ribbon to fabric

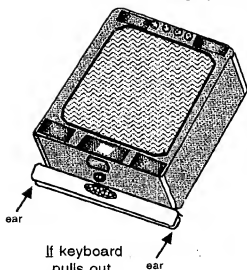
Anti-Slip layer on back of Panels A and B

End View



Micro Cellphone

keyboard
closed



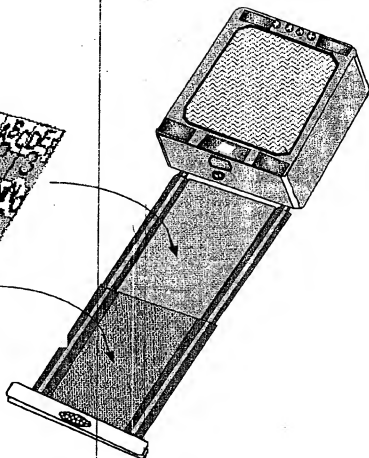
If keyboard
pulls out,
ears protrude
slightly to
provide grip.

ear

fabric
keyboard



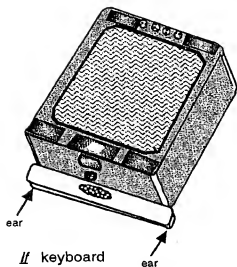
keyboard
open



Micro Cellphone

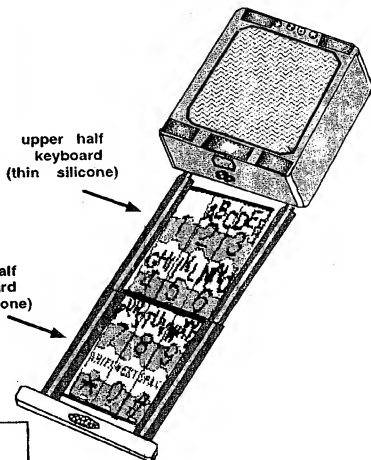
Non-fabric
alternative

keyboard
closed



// keyboard
pulls out,
ears protrude
slightly to
provide grip.

keyboard
open



altered panels A and B to
allow "thicker" keyboard units
(as molded Silicone KB sections)

top half keyboard (as silicone unit)



bottom half keyboard (as silicone unit)